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# ***Trends in education–occupation mismatch among recent immigrants with a bachelor’s degree or higher, 2001 to 2021***

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Selecting immigrants with high levels of education increases their chances of economic success. Immigrants with a bachelor’s degree or higher are more adaptable to changes in the labour market and have steeper growth in employment earnings than those with a trades or high school education (Picot, Hou, & Qiu, 2016). However, many immigrants with a bachelor’s degree or higher have occupations that underutilize their skills, which can reduce their employment income, productivity and well-being (Cornelissen & Turcotte, 2020).

From 2001 to 2016, the Canadian workforce with a bachelor’s degree or higher increased by 1.7 million people, but only half of these workers were absorbed into high-skilled occupations (i.e., jobs that required a bachelor’s degree or higher). This trend towards education–occupation mismatch among workers with a degree was concentrated among recent immigrants as younger Canadian-born people experienced a modest decrease in their mismatch rate over this period (Hou, Lu, & Schimmele, 2019).

As firms have adopted new technologies and automated tasks, the percentage of Canadians employed in managerial, professional and technical occupations has grown. The pace of this change in demand for high-skilled workers accelerated after 2018 (Frenette, 2023). Since the mid-2010s, the earnings gaps between immigrants and Canadian-born workers have narrowed, after widening from 2000 to 2015 (Crossman, Hou, & Picot, 2021). This improvement was likely because of stronger labour demand, as well as policy changes that better aligned the selection of immigrants with labour demand and other factors that increase their chances for economic success. These changes in labour demand may have improved the rate of education–occupation match among immigrants.

This article updates the trends in education–occupation mismatch documented by Hou, Lu and Schimmele (2019) with census data from 2001 to 2021. Education–occupation mismatch is defined based on the educational requirements for occupations in the National Occupational Classification (NOC).<sup>1</sup> Occupations were classified as those that require a bachelor’s degree or higher (high-skilled occupations), some postsecondary education (medium-skilled occupations), or a high school education or less (low-skilled occupations).<sup>2</sup> Workers with a bachelor’s degree or higher who are employed in

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1. The NOC skill level before the 2021 Census was defined primarily based on the amount of education and training typically required for a job. The 2021 NOC was changed to consider education, training, experience and responsibility. To maintain comparability, the 2016 NOC classification was used for the 2021 Census data.
  2. The NOC does not assign educational requirements to management-level occupations. In this study, senior management occupations and specialized middle management occupations were treated as jobs that require a bachelor’s degree. Middle management occupations in retail and wholesale trade and customer services and in trades, transportation, production and utilities were treated as jobs that require some postsecondary education. In the study by Hou, Lu and Schimmele (2019), the skill levels of managerial occupations were determined by the dominant level of education of workers in these occupations. For instance, an occupation where at least 50% of workers have a bachelor’s degree was defined as a high-skilled occupation. The estimates of education–occupation mismatch in the present study are lower than those from Hou, Lu and Schimmele (2019) because of these differences in assigning skill levels to managerial occupations.

low-skilled occupations are considered to be overeducated for their jobs, those employed in medium-skilled occupations are marginally overeducated and those employed in high-skilled occupations are education–occupation matched.<sup>3</sup>

The study focuses on the outcomes of recent immigrants who have been permanent residents of Canada for 10 years or less in a given census year. The rate of education–occupation match of recent immigrants with a degree is an indicator of their long-term prospects for economic integration. In Canada, workers with a bachelor’s degree or higher who have low-skilled occupations early in their careers have increasingly lower chances of transitioning to high-skilled occupations over time (Chen & Fougère, 2014; Cornelissen & Turcotte, 2020).

## Immigrants contributed much of the growth in the number of Canadians with a bachelor’s degree or higher from 2016 to 2021

From 2016 to 2021, the number of Canadians aged 25 to 64 years with a bachelor’s degree or higher increased from 5.2 million to 6.0 million people, continuing the long-term expansion of the population with a high level of educational attainment (Table 1). This occurred because of an increase in the percentage of Canadians with a degree, as well as population growth. Immigrants accounted for 60% of the growth of Canadians with a degree. Growth in the number of Canadians with a degree from 2016 to 2021 was higher among recent immigrants (+25%) and established immigrants (+28%) than among Canadian-born people aged 25 to 34 years (+11%) or those aged 35 to 64 years (+10%).

As in other census years since 2001, immigrants had a higher level of educational attainment than the Canadian-born population in 2021. About 55.3% of recent immigrants and 39.8% of established immigrants had a bachelor’s degree or higher, compared with 32.6% of Canadian-born people aged 25 to 34 years and 24.8% of Canadian-born people aged 35 to 64 years.

Among people aged 25 to 64 years with a bachelor’s degree or higher, 79.1% of recent immigrants and 80.5% of established immigrants were employed in May 2021. The employment rate of recent immigrants with a degree was higher in 2021 than in 2016 or in any other census year since 2001. By contrast, the employment rate of established immigrants with a degree was lower in 2021 than in previous census years. The employment rates of Canadian-born people with a bachelor’s degree or higher were consistently higher than those of recent and established immigrants.

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3. The limitation of defining education–occupation mismatch based on educational requirements is that this method assumes all workers with a bachelor’s degree have the same skills and are perfect substitutes for one another, which is not the case. Some mismatch among immigrants could be attributable to the limited transferability of foreign education or unobserved heterogeneity (e.g., language proficiency) that is not captured in educational credentials.

**Table 1**  
**Estimated population aged 25 to 64 years with a bachelor's degree or higher and employment rates of Canadians with a degree, 2001 to 2021**

	Total	Recent immigrants	Established immigrants	Canadian-born people aged 25 to 34	Canadian-born people aged 35 to 64
			number		
<b>People with a bachelor's degree or higher</b>					
2001	3,131,700	414,300	505,500	722,100	1,489,800
2006	3,883,100	597,300	664,900	800,900	1,820,000
2011	4,622,800	662,900	907,300	933,800	2,118,800
2016	5,201,300	795,600	1,107,900	1,015,800	2,282,000
2021	6,057,800	991,600	1,423,200	1,128,100	2,514,900
			percent		
<b>People with a bachelor's degree or higher</b>					
2001	19.5	33.8	21.5	22.9	15.9
2006	22.7	46.6	24.5	25.7	18.2
2011	25.5	49.0	29.6	28.3	20.4
2016	28.0	49.9	34.2	29.9	22.1
2021	32.0	55.3	39.8	32.6	24.8
			percent		
<b>Employment rates of people with a bachelor's degree or higher</b>					
2001	84.2	73.2	83.9	88.2	85.3
2006	83.2	75.4	82.2	87.8	84.0
2011	82.8	74.8	81.5	87.9	83.7
2016	83.3	75.7	82.4	88.5	84.2
2021	82.9	79.1	80.5	87.4	83.8
			percent		
<b>Population growth from 2001 to 2021</b>	93.4	139.3	181.5	56.2	68.8

**Note:** The estimated population numbers are rounded to the nearest 100.

**Sources:** Statistics Canada, 2001, 2006, 2016 and 2021 censuses of population; and 2011 National Household Survey.

## Education–occupation match has improved for recent immigrants since 2016

Employment growth was more concentrated in high-skilled occupations from 2016 to 2021 than in the previous 15 years for both recent immigrants and younger Canadian-born workers (aged 25 to 34 years) with a bachelor's degree or higher.<sup>4</sup> Among recent immigrants with a bachelor's degree or higher, 59%

4. The analysis of education–occupation match is restricted to working-age Canadians (aged 25 to 64 years) who had a bachelor's degree or higher and worked in the reference week.

of employment growth from 2016 to 2021 was in high-skilled occupations, compared with 32% from 2001 to 2016.<sup>5</sup> Relative growth of employment in high-skilled occupations was higher for younger Canadian-born workers with a degree from 2016 to 2021 (+90%) and in the previous 15 years (+61%).

In the 2016-to-2021 period, the total number of workers with a bachelor's degree or higher grew 15.9%, but their employment in high-skilled occupations grew even more, at 17.8%. With the stronger demand for high-skilled workers, the total overeducation rate in Canada decreased from 14.8% in 2016 to 13.5% in 2021, while the education–occupation match increased 1 percentage point (Table 2). This finding was opposite to the trend over the 2001-to-2016 period, when the match rate decreased from 64.2% to 60.2%.

This change in labour demand reversed the trend towards education–occupation mismatch among recent immigrants. The overeducation rate of recent immigrants decreased from 31.1% in 2016 to 26.7% in 2021.<sup>6</sup> Their rate of education–occupation match concurrently increased from 40.0% in 2016 to 44.4% in 2021.

Even with these improvements, a large percentage of recent immigrants with a degree were in mismatched occupations in 2021, and their rate of education–occupation match was lower than it was 20 years earlier. Furthermore, the disparity in education–occupation match between recent immigrants and young Canadian-born workers was larger in 2021 than it was 20 years earlier. In 2021, the overeducation rate of recent immigrants was more than double that of young Canadian-born workers.

Longer duration of residence in Canada decreased the disparity in education–occupation match with Canadian-born workers, but the gap in overeducation was still large for established immigrants who have been permanent residents of Canada for over 10 years. In 2021, 17.1% of established immigrants were overeducated for their occupations, a small decrease from the 2016 rate. Education–occupation match among established immigrants was unchanged from 2016 to 2021, after decreasing from 2001 to 2016.

## The decreases in education–occupation mismatch since 2016 were widespread among recent immigrants<sup>7</sup>

About two-thirds of recent immigrants in 2021 had a degree from a foreign institution,<sup>8</sup> and this was a key correlate for their high rate of education–occupation mismatch. The overeducation rate of recent immigrants with a foreign degree was 24 percentage points higher than that of younger Canadian-born workers, while it was less than 2 percentage points higher for recent immigrants with a Canadian degree. Overeducation has decreased since 2016 for recent immigrants with a foreign degree and those with a Canadian degree.

In 2021, the overeducation rate of recent immigrants was highest among those from Southeast Asia (54.7%) and lowest among those from Northern Europe (7.3%).<sup>9</sup> A large share of those from Southeast Asia were admitted as caregivers (31.4%), a subgroup that had a very high overeducation rate (69.2%).

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5. Authors' calculations based on the employment numbers in Table 2.

6. The estimates of overeducation for each census year exclude immigrants who arrived in Canada in that year, because these people were in Canada for only a few months.

7. The data for this section are not presented in the tables.

8. This excludes those whose highest degree was from an institution in the United States, Northern Europe, Western Europe, Australia or New Zealand. The overeducation rate of recent immigrants with degrees from these countries was the same as that of younger Canadian-born workers.

9. The overeducation rates of recent immigrants from other source regions were as follows: the United States (9.3%), Central and South America (23.9%), the Caribbean (20.0%), Western Europe (8.5%), Southern Europe (17.7%), Eastern Europe (22.4%), Africa (24.9%), South Asia (26.9%), East Asia (17.6%), West Asia (19.9%) and other regions (8.7%).

The decrease in overeducation since 2016 occurred for recent immigrants from all source regions but was largest for those from South Asia (from 35.6% to 26.9%), which was the leading source of new immigrants. There were also relatively large decreases in overeducation among recent immigrants from Central and South America (from 30.0% to 23.9%) and East Asia (from 22.5% to 17.6%).

The overeducation rate also decreased to a large extent for recent economic immigrants in the Federal Skilled Worker Program (from 26.7% to 19.9%) and Provincial Nominee Program (from 36.6% to 31.6%). The overeducation rate of recent immigrants in the Canadian Experience Class was relatively low and decreased from 14.1% to 12.4%. These decreases in overeducation occurred alongside the introduction of the Express Entry System in 2015 and other changes in immigrant selection that were designed to improve the economic outcomes of immigrants. Overeducation decreased to a smaller extent among other economic immigrants, family-sponsored immigrants and refugees.

In sum, the stronger demand for high-skilled workers since 2016 and changes in immigrant selection reversed the trend towards education–occupation mismatch among recent immigrants with a bachelor’s degree or higher. Despite this improvement, many recent immigrants with a foreign degree encounter disadvantages in the Canadian labour market that contribute to a high rate of education–occupation mismatch.

## **Authors**

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**Table 2**  
**Occupational distribution by required educational level among workers aged 25 to 64 with a bachelor's degree or higher, 2001 to 2021**

	Total	Recent immigrants	Established immigrants	Canadian-born people aged 25 to 34	Canadian-born people aged 35 to 64
number					
<b>2001</b>					
Overeducation	371,000	87,100	63,900	98,300	121,700
Marginal overeducation	571,300	70,700	96,500	145,700	258,500
Education–occupation match	1,693,200	145,400	263,500	393,000	891,300
Total	2,635,500	303,200	423,900	637,000	1,271,500
<b>2006</b>					
Overeducation	528,200	148,100	100,300	110,000	169,800
Marginal overeducation	694,000	105,400	124,000	152,500	312,100
Education–occupation match	2,007,800	196,900	322,500	440,900	1,047,400
Total	3,230,000	450,400	546,800	703,400	1,529,300
<b>2011</b>					
Overeducation	532,400	137,900	125,800	104,100	164,600
Marginal overeducation	915,200	141,200	191,700	194,400	387,800
Education–occupation match	2,380,800	216,800	421,800	522,000	1,220,100
Total	3,828,400	495,900	739,300	820,500	1,772,500
<b>2016</b>					
Overeducation	642,600	187,300	162,300	122,000	170,900
Marginal overeducation	1,081,400	174,400	248,800	224,400	433,800
Education–occupation match	2,610,900	240,800	501,500	552,500	1,316,100
Total	4,334,900	602,500	912,600	898,900	1,920,800
<b>2021</b>					
Overeducation	677,500	209,000	196,200	107,400	165,000
Marginal overeducation	1,269,700	227,200	316,800	247,300	478,300
Education–occupation match	3,076,700	347,700	633,200	631,000	1,464,800
Total	5,023,900	783,900	1,146,200	985,700	2,108,100
percent					
<b>2001</b>					
Overeducation	14.1	28.7	15.1	15.4	9.6
Marginal overeducation	21.7	23.3	22.8	22.9	20.3
Education–occupation match	64.2	48.0	62.2	61.7	70.1
<b>2006</b>					
Overeducation	16.4	32.9	18.4	15.6	11.1
Marginal overeducation	21.5	23.4	22.7	21.7	20.4
Education–occupation match	62.2	43.7	59.0	62.7	68.5
<b>2011</b>					
Overeducation	13.9	27.8	17.0	12.7	9.3
Marginal overeducation	23.9	28.5	25.9	23.7	21.9
Education–occupation match	62.2	43.7	57.1	63.6	68.8
<b>2016</b>					
Overeducation	14.8	31.1	17.8	13.6	8.9
Marginal overeducation	25.0	29.0	27.3	25.0	22.6
Education–occupation match	60.2	40.0	55.0	61.5	68.5
<b>2021</b>					
Overeducation	13.5	26.7	17.1	10.9	7.8
Marginal overeducation	25.3	29.0	27.6	25.1	22.7
Education–occupation match	61.2	44.4	55.2	64.0	69.5

**Note:** The estimated numbers of workers are rounded to the nearest 100.

**Sources:** Statistics Canada, 2001, 2006, 2016 and 2021 censuses of population; and 2011 National Household Survey.



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